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and Photographic Enlarger
Edited by J. Hay Taylor
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NOTICES.

THE *Optical Magic Lantern Journal and Photographic Enlarger* is issued on the 1st of every month, price Two Pence, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free:—

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SMALL ADVERTISEMENTS must reach the office not later than the first post on the 24th of each month. All cheques and postal orders to be made payable to the Magic Lantern Journal Company, Limited.

EDITORIAL communications must be addressed, **J. HAY TAYLOR.** Advertisements and business communications to **Jos. T. Smith, Secretary, Magic Lantern Journal Company, Limited, 9, Carthusian Street, London, E.C.**

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NOTES.

Acetylene as a Standard for Light.—A new standard of light has been suggested by Mr. C. Fery at a lecture before the Academy of Sciences, Paris. He proposes a flame of acetylene supplied through a jet of half a millimetre diameter, and points out that it supplies an excellent method whereby the commercial value of samples of calcium carbide may be determined.

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Photographic Guild.—The Photographic Guild has been formed with offices at 6, Farringdon Avenue, London, the object being to provide the advantages of a photographic society for isolated workers all over the world. One of the objects of the guild will be to secure reduced railway rates to members of the guild travelling for *boná fide* photography, and carrying their badge and apparatus. The annual subscription has been fixed at 5s., and a book of rules, etc., may be obtained from the hon. sec., Mr. H. Snowden Ward.

A Curious Law Action.—A peculiar libel action has just been decided at Port Elizabeth, in which a verdict of £5 with costs was given. It appears that a photographer exhibited a photograph of the plaintiff in his studio window with the following notice attached:—"This gentleman, Mr. Lundin, will much oblige by paying the balance for his portraits, which has been standing since September, 1897. I suppose this is another example of Christianity as it is practised."

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Mr. F. A. Bridge at the Crystal Palace.—During the three weeks of the Photographic Exhibition at the Crystal Palace, a selection of lantern slides was projected on the screen in the theatre each evening under the directorship of Mr. F. A. Bridge. About 2,500 by some of the best workers were shown. The whole of the exhibitions were run without the slightest hitch of any kind, nor is this to be wondered at, with Mr. Bridge as director, Mr. R. R. Beard at the lantern, and the electric light in the hands of Mr. Carr—three gentlemen who are adepts at the several departments which they undertook.

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Presentation of a Gold Watch.—So satisfied were the exhibitors at the Photographic Trades Exhibition lately held at the Portman Rooms, that they subscribed for and presented a handsome gold watch to Mr. Arthur C. Brookes, the organiser and secretary.

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Agency for French Slides.—Messrs. Jos. Levi & Company, 97, Hatton Garden, E.C., have been appointed sole wholesale agents for the well-known lantern and stereoscopic slides made by Levi & Sons, of Paris.

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Change of Address. — Messrs. George Mason & Company, who have long occupied premises in Sauchiehall Street, Glasgow, have (on 28th ult.) removed to more commodious and central premises at 120 & 124, Buchanan Street, Glasgow. Their new catalogue issued from this address is an excellent book containing much useful information, in addition to illustrations and prices of apparatus.

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Affiliation of Photographic Societies.—The following lectures, etc., are available for circulation, application for which should be made to the Assistant Secretary, Royal Photographic Society, 12, Hanover Square, London, W. Lantern slide making, by Mr. J. A. Hodges, F.R.P.S., with lantern slide illustrations; negative making, by Mr. Chapman Jones, F.I.C., F.C.S., F.R.P.S., with lantern slide illustrations; pictorial photography, by Mr. A. Horsley Hinton, with lantern slide illustrations; architectural photography, by Mr. H. W. Bennett, F.R.P.S., with lantern slide illustrations; intensification and reduction, by Mr. John McIntosh, with lantern slide illustrations; hand camera work, by Mr. W. Thomas, with lantern slide illustrations; portraiture, by Mr. Harold Baker, with lantern slide illustrations; elementary photographic optics, by Mr. R. Child Bailey, with lantern slide illustrations; bromide enlarging, by Mr. H. John Gear, F.R.P.S., with lantern slide illustrations; a set of 67 lantern slides, entitled "Linen and its Production," with explanatory notes by the Brechin Photographic Association; a set of 33 slides by the Rotterdam Photographic Society; a set of 60 slides by the Holborn Camera Club; a set of 50 slides by the Hampstead Photographic Club; a set of 68 slides by the North Middlesex Photographic Society; a set of slides sent by the Leeds Photographic Society; a set of 50 slides by the Southport Social Photographic Club.

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Making use of "Gladstone" Slides.—In a Scottish border town well known as a Radical stronghold, an enterprising stationer, who is a lanternist, has made good use these few days of National mourning for Britain's greatest statesman, of a set of slides of Hawarden, including slides of Mr. Gladstone. He set up about a dozen in the front of the window, and they proved a splendid attraction. The energetic lanternist and stationer alluded to is Mr. F. J. Walker, of Galashiels.

Automatic Acetylene Lantern Lamp.

AMONG the novelties in last issue we devoted a paragraph to an automatic lamp which had been made by Mr. W. Tylar, of Birmingham, and promised during the month to give the apparatus a trial. The lamp in question, we may say, is the model from which it is proposed to make them commercially. As all parts of the lamp and generator are enclosed, thus preventing many from understanding the principles on which it works, we decided to analyse matters and prepare drawings before trying it, for we received the lamp without any instructions as to how it worked or what it would do, and we would strongly advise anyone purchasing a lamp of this kind to well study the sketches we give, in order to have a thorough understanding of the apparatus ere using it, otherwise accidents might occur; whereas in the hands of one who understands its method of working it will be found excellent. There is, however, one element of danger in the model before us, which it is to be hoped the makers will overcome before issuing them to the public. This danger, and means for overcoming same, we will speak of after explaining the principles of working.

The apparatus, which is 7½ inches high by 4½ inches by 4½ inches (without front and back projections) goes bodily into the lantern, and in the hands of one who understands it, will work automatically after it is started.

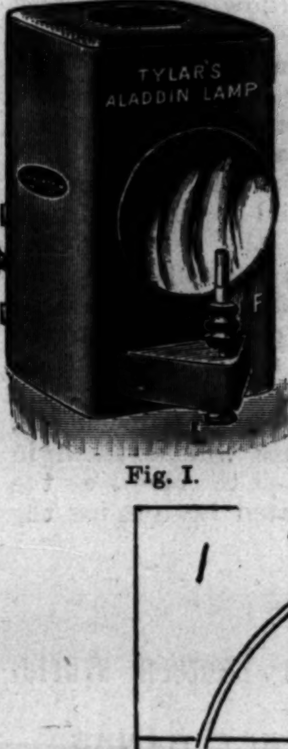

Fig. I.

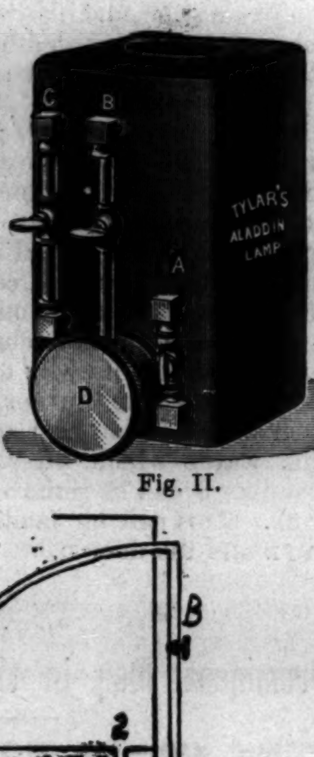

Fig. II.

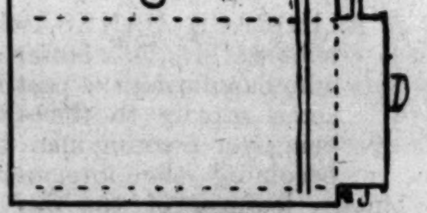

Fig. III

Fig. I. shows the front containing the burner, which is Bray's 00000, together with the reflector, and Fig. II. shows the back view with three taps, in addition to a trap-door and a plug.

The Figs. III., IV., and V., show in what manner the pipes and taps seen at the view in Fig. II. act. It will be seen that a separate sketch is devoted to each of the three tubes, the better to be explicit.

We will now charge the apparatus and follow its mode of working. A circular chamber will be seen in the lower portion of the apparatus (Fig. III.), this chamber being closed by the trap-door D, which is a screw lid. We will open D and withdraw the small circular receptacle which is to contain the calcium carbide, and also open the tap B. Now, through the opening 4 at the top must be poured 42 ounces of water, which will exactly fill this chamber. The tap B and the door D being open, the water in 1 will flow down the tube 2 into the lower chamber marked 3, the air being expelled up the tube *via* B and out at D. We have now the upper chamber empty of water and the lower one filled.

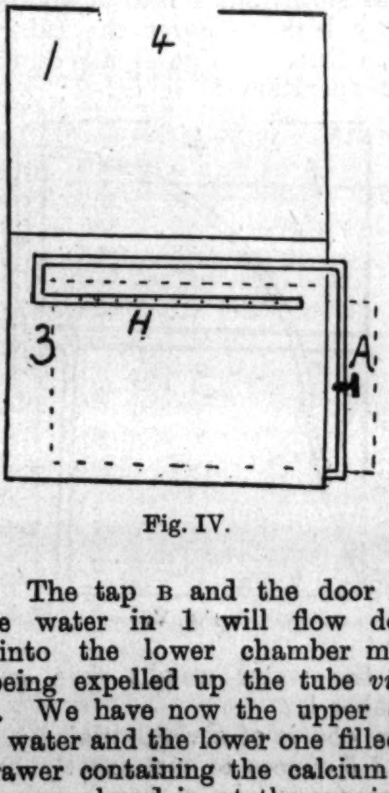

Fig. IV.

The drawer containing the calcium carbide should be now placed in at the opening D, and the door closed. We find the best quantity to use to be 5 ounces; the container will hold more, but the refuse left after this quantity has been exhausted exactly fills the container. For the next operation we must refer to Fig. IV. Here we have the tube leading from the bottom of chamber 3 into the top of the generating chamber. When chamber 3 is full of water, as supposed to be in the present instance, turning on the tap A will allow a very small quantity of water to flow from the perforations in tube H on to the calcium carbide, causing some gas to generate. We will now revert to Fig. III., and see what becomes of the gas. It is imperative that the tap B be open; the gas thus escapes up the pipe B, thence downwards into the chamber marked 3, and on entering, it displaces its bulk of water, which is forced up the pipe 2 into chamber 1; this weight of water acts as a slight pressure on the gas, keeping a steady supply to the burner (see Fig. I.). In order to see by what means the gas makes its way from chamber 3 to the burner, we will refer to Fig. V., there being an outlet provided as soon as the tap C is turned on. All three taps, A, B and C are now turned on and must be left so. The gas which is generating will cause water to be dispelled from 3 up the tube 2 into chamber 1, and by its weight force the gas *via* C. Little by little the water will sink from 1 into 3, and when it is sufficiently high to cover the tube shown in Fig. IV., a little more water falls on the carbide and the operation is repeated; and in this manner the water weight rises and falls in the chamber 1.

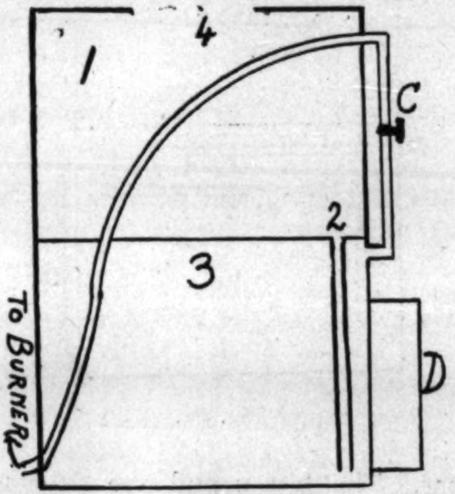

Fig. V.

In the course of several trials we found the charge of 5 ounces to last exactly 80 minutes. If desired a new charge can be placed in the generating chamber whilst the gas is burning, but when doing this it must be when 1 is tolerably full of water and just commencing to go down. The taps B and A are turned off, then D can be opened, but here we must sound a note of warning, for there is bound to be some gas present in so doing, and it must be remembered that a flame is only a few inches away.

We have dwelt at some length when giving a description of this apparatus, for it is ingenious and useful, and we personally have not the slightest hesitation in using it, but as we said at the commencement, there is one drawback about it which we trust the makers will overcome before inexperienced lantern workers get hold of it, and that is, unless the tap A is carefully adjusted, a little more gas may be generated than the gas chamber 3 will contain and there is nothing for the gas to do but bubble up through the tube 2, and find its escape through the water at the opening marked 4, when owing to the proximity to the burner it immediately takes fire. The quantity of gas thus liable to escape is, under the worst circumstances, little, but it is apt to astonish one when not expecting such a sudden blaze; however, a slight turning off of the tap A prevents a repetition.

With the apparatus we have, it is our intention to remedy all chance of this by fitting a screw cap to the opening 4, and leading a pipe from this to a small gasometer capable of holding say 60 fluid ounces. The top of the apparatus thus being closed, this overflow gasometer will ebb and flow in sympathy with the height of the water which may be in chamber 1, for as the water rises in it the air which it contained will enter the gasometer; and in this, too, care must be taken, for the chances are that in a short time the gasometer will contain an explosive mixture of gas, and it will be wise to open it out of doors after the generator has been finished with. If convenient the pipe can of course be laid to the outside air.

Should any moisture be condensed from the gas, it will find its way to a chamber immediately below the burner (as seen in Fig. I.), from which it can be removed by the plug E. The water which after use will be found in chamber 3, can be removed at the plug J at the back. This can be facilitated by opening the tap B and the door D.

Prominent Men in the Lantern World.

No. XVI.—Mr. HORACE BANKS.

MR. HORACE BANKS, whose portrait we give, is a lantern lecturer who has during the past few years come rapidly to the front, and being yet a young man, his aim of becoming the foremost popular lantern lecturer of the day is on a fair way to being achieved.

He was, we learn, born in London on July 31st, 1859, and was educated at Hayman's

College. Soon after attaining his thirteenth birthday he decided to go to sea, and embarked on a voyage of nearly two years to Australia, China, and Japan.

His trip to Australia made him determined to return there after his voyage terminated, and he became subsequently engaged in the coasting line for several years as one of the officers in the Australian Steamship Navigation Company's service, and subsequently as Lieutenant in the Naval Reserve of that colony. Here he gained an intimate knowledge of Australia, New Zealand, and Tasmania. It appears that Mr. Banks made good use of his note book at all times, the benefits of which he is at the present time reaping. After an absence of about six years he returned to England, but restless on land he made a voyage to India, and on the homeward passage his ship (S.S. "Seagull") was wrecked on the Maldive Islands, but he and others were saved by a passing steamer which took them on to Colombo, from which place he returned to London.

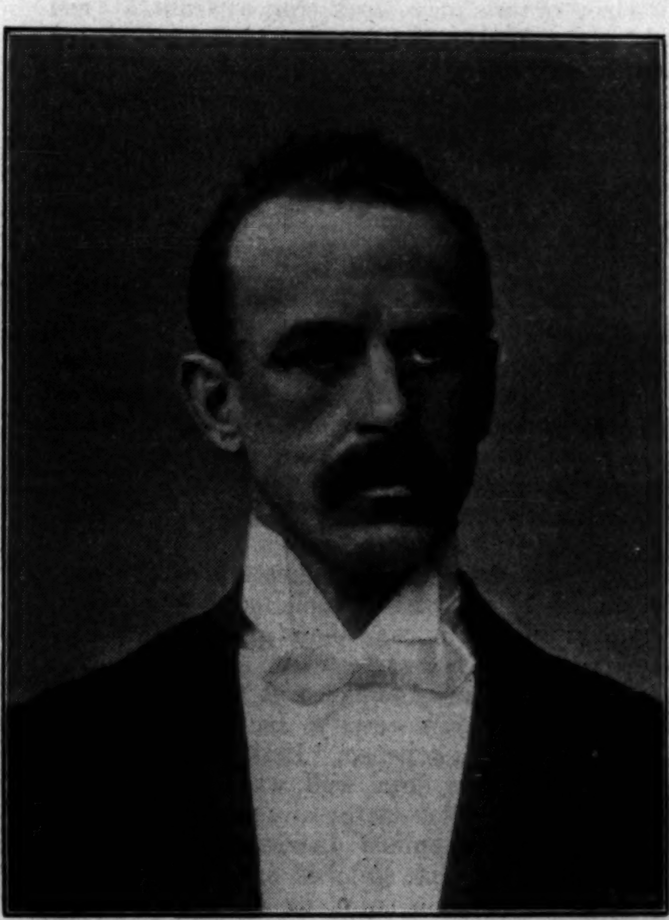

Photo by Hellis & Sons] [*London*

1898.

The wreck caused him to look with a more favourable eye on *terra firma*, and a good opening presenting itself in a commercial capacity, this was gladly accepted and the sea abandoned.

When spending a holiday one year at Jersey, some of his companions had their cameras with them, and the subject of our sketch caught the photographic fever very badly, and for some time this remained his sole hobby. It is interesting to know that he in conjunction with Mr. Gardner founded the East Dulwich and Peckham Photographic Society in the early part of 1889. This society is now known as the South London Photographic Society.

Having taken many negatives and made innumerable slides from them, the addition of lantern work to the photographic hobby was an easy step. With slides of his own making, in addition to commercial slides before him one evening, it occurred to Mr. Banks that his notes on his travels might be of interest to the public if presented in an attractive style. So a high-class triple lantern was purchased, and his first public engagement took place at the Horsham Mutual Improvement Society in 1890.

The following year he made the acquaintance of Mr. L. W. Greaves, who gave valuable assistance in connection with the lantern and dioramic effects. The number of lecturing engagements increased rapidly, and the making of new slides and adjuncts to the apparatus employed, ended in a partnership being entered into between Messrs. Banks & Greaves, and a manufacturing optician's business was opened at Clapham Road. Lantern lecturing continued to increase, so the business resolved itself into Mr. Banks attending to the lecturing and Mr. Greaves to the optical department. Lately a concert party has been added to the lectures, and songs and ballads are illustrated by photographic views with great success.

When the Chicago Exhibition was opened Mr. Banks was early on the scene, took a number of photographs, wrote his lecture out on the homeward voyage, and within a short time after his return was filling engagements; and so this energetic man continues. On Whit-Monday he terminated a prolonged engagement at the Alexandra Palace in order to fill other engagements in the provinces, but he is to again lecture at the Palace during August next.

We might add that Mr. Banks holds prominent positions in the Masonic world.

The Optical Lantern and its Educational Future.

By S. W. BIDWELL.

THE magic or optical lantern is said to be the invention of Athenasius Kircher about the year 1680, and is also supposed to have been known to Roger Bacon some 400 years earlier. For a long time after its discovery the magic lantern was used chiefly to exhibit on a screen or whitened wall comic pictures simply as a source of amusement, or at other times was employed by artful wizards for the purpose of summoning up ghosts with the object of deceiving uneducated and unthinking people. Now, its uses are of a more decided scientific and educational character, which, since the discovery of polarised light, have been considerably extended. I need only refer to the enlargement of photographs as one of the commercial uses to which the lantern has been applied. The sciopticon is a more modern invention, and may here be dismissed from our consideration. The lantern is, in my opinion, only in its infancy, but combined with its sister, photography, has undoubtedly a great future before it.

There can be little doubt that education can be better carried on by the eye than by means of the tongue and ear, and the impressions are more lasting. This is shown by the use of stained windows in the **cathedrals and churches** of times long gone by. Even the ancient MSS. were illuminated, and in many instances the initial letters were really works of art, and used for the instruction of the ignorant masses of the Middle Ages. This was one of the means adopted by the Roman church when the education of the populations of every civilised state was in its hands. By this means another gospel was written for the people, and no doubt impressed them far more than mere verbal instruction.

So much for the past, now as to the future. What part the lantern may play in religious movements we have some little idea of by Mr. Carlile's doings at his church of St. Mary-at-Hill, London, where services illustrated by the lantern have now for some time been before the public, with a most astounding effect; where, indeed, Sunday after Sunday throngs of people flock to see and hear. At many other places of worship also the lantern is frequently used. Not long since I attended a lecture by the Rev. C. Spurgeon on various London Cries, illustrated by slides taken of the several phases of the cry and criers the lecturer described, which would not have been half so effective if the lecturer had simply delivered the lecture *vivâ voce*.

One knows, of course, that as soon as photography has mastered the taking of pictures with colours, a very great barrier will have been cast down. Nor need we have any misgivings as to the possibilities when we look at the wonderful results lately exhibited at the Crystal Palace, or we may look for a while at the pictures taken by Sir Norman Lockyer and his colleagues during the late total eclipse of the sun. The fruits of the application of photography to physiology have also been seen through the Röntgen rays.

Of course, to make the lantern an educational machine we must rear a number of skilled operators, not necessarily a new or **privileged class,** but engraft the instruction on the curriculum of the school master or mistress, for it is of great importance that the lantern operator should be thoroughly efficient. Or again, if the Education Department were to make the optics paper compulsory instead of optional, the lantern portion could easily be made to fit into it.

Now we come to the question of expense. Don't be afraid, oh! School Board economist, nor cast up your eyes in pious grief! Undoubtedly the lanterns, screens, slides, etc., must form a large item of expense at the outset, and slides must of necessity be a constantly recurring item of expense. If the work is to be done it must be done well, whatever the cost may be. Don't let us by any means spoil our ship by a parsimonious distribution of tar. I have no doubt that some of our great lantern makers would soon come to our relief. Why should not many of them contrive to work out something which, while diminishing the cost, would not impair the quality of the instrument. I feel sure that if the work were once taken up in earnest, and it was found that it could be commercially made to pay, efforts would not be wanting to give us first-class instruments for school use at a very large diminution in the cost. Further, the slides may be hired or purchased, as is now done in many cases. As to lecturers, there can be no possibility of doubt that the masters and mistresses of schools would make the most able and perhaps the most entertaining of that class.

Another important point in connection with the lantern is missionary enterprise abroad. The Church Missionary Society is using lanterns for their work at home and abroad. They, however, have but a small supply of lanterns, and also an inadequate number of slides. The Wesleyans, again, have but a small supply of lanterns and slides. The Church of England Temperance Society seem to use the lantern very largely, and have also a very fair and numerous collection of slides on hire or purchase, but still not enough. However, the thin end of the wedge is already in the proper place, and only requires a firm resolve to drive it home. Let us then be up and doing, and a firm will and strong resolution will soon accomplish the rest.

I may have more to say on this subject shortly.

* * *

How Cinematographic Machines Work.—No. V.

By **MAGNET.**

FIGURE XII. illustrates by a vertical longitudinal section a cinematographic machine invented by A. F. Parnaland, of Paris. The machine is of that class in which the intermittent feed to the film is obtained by reciprocating parts carrying pawls, which engage in perforations in the films, and step by step feed the film into its position in the exposure aperture. In the figure referred to, D is the film unwound from a spindle E descending a guide F between back plate G of casing A and the inner surface of a moveable plate H working in guides.

On the inner face of the plate G, and in the direction of its vertical axis, is arranged a slide K, the vertical reciprocating motion of which is caused by two connecting rods L L^1 articulated at their lower ends to the same lever M oscillating upon a shaft M^1, whilst the upper end of the rod L is connected to the slide K, and the upper end of the rod L^1 is connected to a crank shaft N, the rotation of which is caused by means of an intermediate pinion N^1 keyed on the crank shaft, and driven by a toothed wheel N^{11} keyed on the driving shaft O, driven from outside the casing A by a hand wheel O^1.

The slide K is provided along its vertical axis with an opening P, in which work side by side two pawls Q Q^1 (only one of which is seen in the figure) which are mounted to oscillate upon a spindle P^1 carried by the slide K. The lower ends of these pawls pass through the opening P of said slide K and press against the film D, the plate G being provided for that purpose with a corresponding opening R enabling the pawls to pass through and move, these pawls taking part in the reciprocating vertical movement of the slide K. The pawls are always pressed against the film D by a spring S. The film D is provided along its longitudinal axis, which corresponds exactly to the vertical axis of the slide K, with horizontal holes, the edges of which co-operate with the pawls; the distance separating the lower edges of two consecutive holes being equal to the desired movement of the film for projection or exposure.

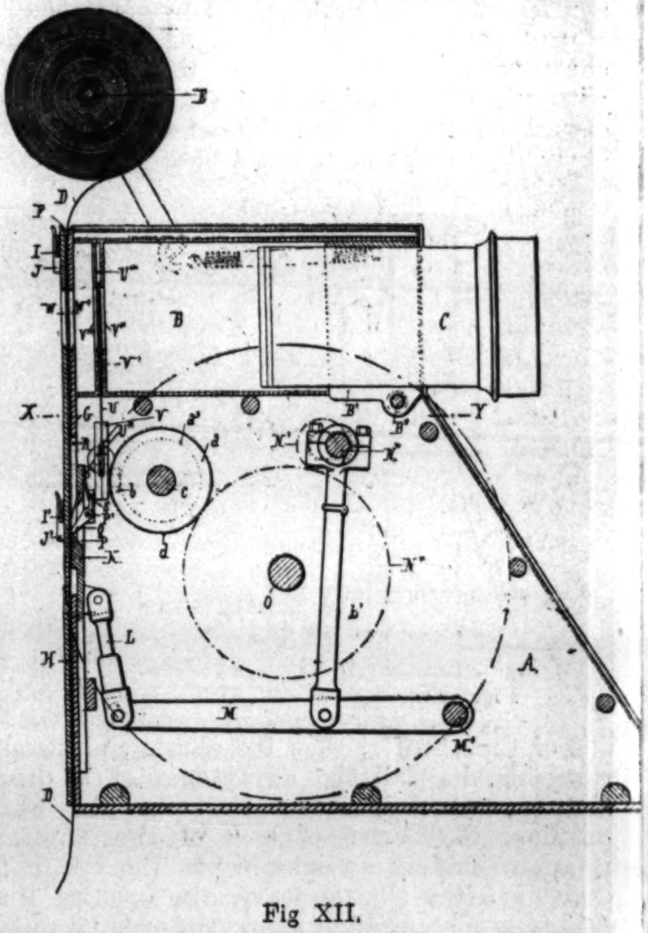

Fig XII.

It will be seen that motion being imparted to the operating mechanism described, with the downward movement of the slide K and pawls Q Q^1 will take place the movement of the film D, and during the upward movement of the same parts, the film will remain stationary.

The shutter U is of the oscillating type, and works in a slot U^{111} of the tube B, movement being imparted to it by a cam *a* keyed on a shaft *c* which is caused to rotate by a pinion *d* driven by the main wheel N¹¹ on the driving shaft O. The movement being such that when the film is stationary the objective is uncovered, and when the film is moving the objective is closed.

In order to prevent the objective C from being moved by the vibration of the apparatus when working, it is clamped by a tightening collar B^1 and screw B^{11}. No. 13642 of 1896.

Another cinematographic machine, the movement of the film being a step by step motion, is shown in the accompanying figures XIII. and XIV., and a rotating shutter is employed which is constructed in such a way as to give a drop shutter effect in working. The construction of this shutter is shown in Fig. XIII., B is the shutter of a segmental shape, that is to say, with one edge straight and the opposite side curved, but with the one end cut across instead of coming to a point as in the case of the other end of the shutter, thus the shutter, although revolving, has all the advantages of a drop shutter; when it starts to cover the film opening, the lower edge *b* of the shutter is approximately straight across the opening, and when the shutter leaves the opening the end 6^1 is also straight across the opening so as to give a complete exposure of the picture and a complete cut off of the picture during the instant that the following picture is appearing. The shutter B is attached to the end of the arm 6^2, which is secured to the disc E keyed on the horizontal shaft *f*. The said shaft *f* is mounted eccentrically on a disc G at the other side of the plate A, which disc is carried upon the horizontal shaft G^1 to which the rotating gear is connected. The shaft *f* of the shutter arm is set one-half inch out of line of the main shaft G^1, and is provided with a triangular shaped tappet H, and the arrangement is such that as the disc G is rotated the shutter is simultaneously rotated, and the film gripping and feeding mechanism likewise.

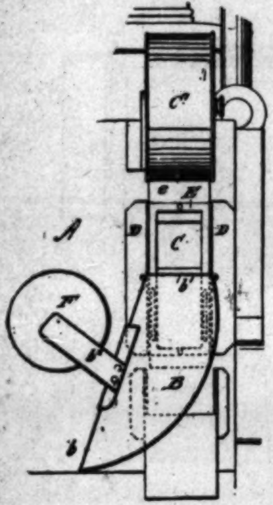

Fig. XIII.

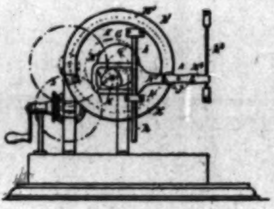

Fig. XIV.

The film is perforated at both sides in the ordinary way, and to grip and feed the film two pairs of horizontal pins J are used to correspond with the perforations at each side of the film; the pins are fixed at right angles to a bar *j* which is moved to and from the film by means of the rotating disc K. The pins J pass through the joggling arm H^2, which is moved rapidly up and down through the medium of the triangular tappet H, and is guided by the pin j^1 which works through a hole in the guide bar j^2 and is bracketed to the side of the tappet moved arm.

The disc K rotates between two pins L, and by virtue of a bulge *k* on the edge of the rotating disc the pins are caused to vibrate in and out of the perforations in the film. The arrangement is such that when the bulge *k* of the disc comes in contact with the disc pins L on the downward motion of the disc, it puts the film pins out of gear by drawing them back. Meantime the motion of the tappet is carrying the forked arm upwards for the purpose of enabling the pins to be ready to take another grip of the film. On the flat part of the disc cam coming into action with the disc pins the gripping pins are put into action, and when the bulge of the disc comes round again the film pins are withdrawn from out of the perforations. No. 28799 of 1896.

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How to Select a View.

By E. DUNMORE.

THERE is little doubt but that the success of the landscape photographer hinges mainly on his ability to select a suitable subject, for no matter how excellently well the negative may be made, or however skilfully it be may printed, a wrong or uninteresting subject will afford little or no pleasure to anyone; this especially applies to lantern slides when the positive is exhibited on an enlarged scale, which emphasises the wrongness and tires with its utter commonplace effect. Very many who take up camera work and start out for a day's photographic exercise and amusement, feel somewhat nonplussed at the very beginning by their inability to find anything to photograph that comes up to their ideas of a picture. "So-and-so recommended this place; what a disappointment, for there is absolutely nothing in it worth a plate." Most of us have probably experienced this sort of feeling at some period or another of our early wanderings, which same locality may afterwards, when we have had more experience, be found to abound with suitable subjects; it may or may not, but there is no question about it that very frequently when a locality has been highly recommended by a non-photographer it will prove exceedingly disappointing to the photographer.

There are two principal conditions that please the outsider, namely extensive prospects and brilliant colour, either of which are very much discounted when transferred to the sensitive plate. Another thing, two persons rarely hold the same opinion about the details of a view, the most attractive form to one would not be so with the other, although both might approve it on the whole.

Now it is these little details that are so important to the photographer, and upon which depends the success of his picture. As to colour it is reduced to monochrome, and distance, of itself, to general

insipidity of effect.

Experienced workers are sometimes misled by the varied and glowing colours of a landscape, which they fail to sufficiently ignore in the composition of the picture, so difficult it is to dissociate colour from form when the sensations created are so pleasurable.

A landscape must be regarded as a monochrome in all respects, and the lights and shadows arranged with regard to it, whether we use orthochromatic plates and screen or not. The ability to do this is a matter more of experience than anything else. If we examine the view through a coloured medium, such as blue glass, we decidedly destroy the beauty of the scene, but get a better idea of how the colours will be translated into light and shade (*q.e.d.*). The constant habit of looking through a medium of this sort at what we intend to photograph, will help us to form more correct ideas when we do not use it until we may safely lay it on one side and trust to our unaided judgment, having learnt that often the very form of many things rests on contrast of colour alone. For instance, when blue of different intensity forms the shadows and chrome-yellow the light, the disposition of these two shades may decide the form without reference to anything else, not that such decided colours would be very likely to exist in nature, but modifications of them do, and have considerable influence in deciding the quality of the picture. Correct judgment in this matter is one of the first things to learn, and the next is the amount of subject we should include in our negatives.

The idea of most beginners is to get as much as possible on to their plates. A view from a mountain top or great elevation recommends itself at once as a grand view, but unless this grand view is qualified by a considerable amount of foreground the results will not give satisfaction. The same may be said of the use of wide angle lenses which are a decided trap for the unwary, and owe their popularity to the fact of the users wishing to get as much on their plates as possible, and it satisfies their desire, but certainly at their expense of artistic work. My advice is to always work with as narrow-angled lenses as possible, the pictures will have more pleasant perspectives and be more artistic altogether. The wider the angle included, the more disproportionate will be the foreground and distance; the first will be abnormally magnified, and the latter dwarfed to insignificance. Of course there are times when a wide angle lens is necessary, but seldom or ever in ordinary landscape work. I fancy the most useful angle is when the focus of the lens is somewhat longer, say one-fifth, than the base line of the plate; as soon as we get the focus of the lens shorter than the plate, the wide angle effect begins to make itself felt, and our pictures lose that

naturalistic effect

that is so pleasing to an artistic eye, and assume a more commonplace appearance.

With regard to distance, under any circumstances unless taken with a telephoto lens, it appears dwarfed. This effect is in a great measure owing to our eyes being educated, by paintings, wrongly to expect the distance to appear on a larger scale than it really does. We know the lens is correct, providing the picture is examined from a distance equal to its focus; soon as this is exceeded, then we get wrong impressions, and as we seldom look at a photograph at less than a foot distance, often more, it stands to reason it would be inconvenient, to say the least of it, to do so with pictures produced by the wide angle objectives whose focus is but a few inches. With regard to the effect of distance in a photograph, although unsatisfactory if taken alone, they are of great value in a subject consisting chiefly of foreground or near middle distance; the introduction of a little distance, however small and restricted, adds a good deal of importance to the rest of the composition.

This brings us to the consideration of foregrounds which, from a photographic point of view, are nine times out of ten the most important part of the picture. Being close at hand many details are seen that are unnoticeable at a greater distance demanding better definition and careful arrangement of lines; a well arranged foreground is the making of a picture, one badly done at once condemns it. Having made these remarks, the next thing is to carry them out in practice.

A landscape may be summarised as a tree, a rail, and a patch of water; given these three items it should not be difficult to construct a picture. We criticise the combination from different points of view and under different conditions of illumination, choosing the best. The water will reflect its surroundings in different ways according to the angle from which we observe them, but always the shaded side of things which makes the shadows darker than the objects reflected, affording us an opportunity of contrasting lights and shadows that may be of great value to the composition. At some angle or other the water will reflect the sky alone, and come out in the picture an unmeaning patch of white, as offensive to good taste as a cloudless sky. The careful examination of water surface under different lights and conditions is instructive. It will be found that a slight ripple will give an infinitely more watery effect than a surface

perfectly quiescent;

absolutely unruffled water seldom looks like water in the print—there is no depth in it; there are the reflections, it is true, but unsatisfactory. A sharp breeze over the surface is worse still, as all reflections are obliterated, leaving only a patch of white without fluidity or depth; a slight oily ripple is most effective. A careful study of the most ordinary and simple places, providing they possess a certain amount of variety of form, can be made into pleasing pictures if the lighting is rightly judged. No doubt in some districts subjects suitable for the camera are more plentiful than in others, but, at the same time, a most unpromising place will often provide good pictures if properly looked over. I think in photography familiarity often breeds contempt, and miles are often traversed to obtain a picture that would be inferior to one at our own doors, under our very noses. I have noticed this repeatedly.

In choosing a locality on which we can expose our plates with a fair chance of satisfactory results, by preference select a valley through which a stream runs, or ruined or dismantled places that have for a long time been left to decay and the foliage that will surround them also left to grow wild and untouched. A tumbledown old cottage of which there are abundance of samples here and there in the country will very often make most pretty subjects; in fact, the more neglected and worthless places are from a utilitarian point of view, the better for photography. The greatest drawback to this style of subject near town is that they are made a sort of free playground for the ubiquitous urchin who soon knocks all the picturesqueness out of them. The canals are far from being bad hunting grounds, especially in the neighbourhood of locks—groups of barges, horses, and men form often very suitable subjects.

Country roads when somewhat narrow and irregular are calculated to supply

pretty pictures,

especially when crossed by a shallow stream forming a ford. Wide roads do not offer the same attraction, even if bordered with fine timber. The road is usually too much in evidence, and by standing at the side the trees hide one another too much. The chance of getting a good picture out of such a road depends very much on moving objects using it, but all roads, wide or narrow, are much improved by good groups; but any man in modern attire posing himself in front spoils the whole arrangement. If such a figure happens to be in the field of view let him take some inconspicuous position and look away from the camera. If he can be persuaded to remove his coat and hang it over his arm so much the better, and if he is the proud possessor of a top hat, let him sit on it, for of all abominations a top hat in a rustic scene is the greatest.

Woods and plantations are not altogether good places for photographing unless intersected with fairly wide roads, when very attractive pictures can be secured. "Edge of the Wood," is a favourite title for views of trees, but we may remember it is not at all necessary to have a wood to get such tree groupings; the wood is very often not more than a figure of speech, as it does not appear in the photograph. Usually in a wood there is little else than the lower parts of trees to be seen, which owing to the fact of being in a wood are too uniform and monotonous in shape to be picturesque; trees growing in less crowded places are almost always better in form, and the undergrowth is also bolder and more varied, and to this undergrowth a great deal of the picturesqueness is due. In the wood the branches of the trees are so interlaced and confused that it is very difficult to make them look well in a picture, and if the sky shines through the chances of halation are very probable, to the ruin of the whole effect. It is seldom worth while to photograph a tangle of leaves unless certain branches are fairly free and conspicuous sufficient to indicate the character of it. Plane and sycamore trees are excellent in this respect, their leaves being very characteristic. Full exposure should be always given to these subjects and backed plates used. Old-fashioned farmsteads will generally supply plenty of material for picture making, whereas modern up-to-date places are much too smart and tidy for the purpose, abounding as a rule in straight lines, well repaired fencing and square brickwork, everything so orderly and well kept that it does not give the picturesque a chance. The lazy slovenly farmer is much the best purveyor for photographers, which is possibly his chief virtue. As a rule no objections are raised to photographers wandering about a farm in search of pictures; it is, however, only courtesy to ask permission before doing so, even if the place seems almost open to the highway, as occasionally some crusty occupier will resent the slightest intrusion on his domains with the most bitter animosity if his consent is not asked, so it is best at all times to obtain the preliminary permission, then one can go about with a comfortable conscience, feel they are not trepassing, and also get useful assistance in moving some object or other to more suitable positions.

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Electrorama.—At "Niagara," Westminster, London, a novel exhibition has just been opened. It consists of the projection of photographs covering a circular screen of 400 feet in circumference and 40 feet high. The projection apparatus, which has been invented and patented by Mr. T. W. Barber, C.E., consists mainly of 10 lantern stage fronts radiating from a common centre, the illumination being obtained from one jet of peculiar formation with 10 nipples, which has been designed and made by Mr. C. W. Locke. The slides are 7¼ by 6½ inches, and when projected join perfectly, thus giving one the impression of standing, say, on the breakwater at Margate, from which position the town, sea, and surrounding country can be viewed. The projection apparatus (of which we shall give an illustrated description in next issue) is under the management of Mr. C. W. Locke, who, at stated intervals during each day, will also project cinematographic pictures in the lower hall of the building. This exhibition should become immensely popular, as about 150 complete sets of pictures (tinted) are already completed.

The Lanternist's Practical Cyclopædia.—No. XX.*

By CHARLES E. RENDLE.

Photography.—The art of producing pictures, or of obtaining accurate representations of objects on a chemically prepared base, by the action of actinic light. In the last century the alchemists, Steel in 1777, and Ritter in 1801, investigated the cause of chloride of silver turning black when exposed to light. Further developments were made some years later by Joseph Nicephore de Niepe and others till 1839, when Daguerre announced his discovery of what was called the Daguerreotype, and which has been outlined in an earlier article under his name. With certain modifications the silver process has gone on to the present time, the various results generally bearing the name of discoverer or inventor, such as the Talbottype of Talbot, Woodburytype of Woodbury, and so on, but as most of the many branches of the photographic systems have been sketched under their several headings, as Dark Room, Lens, Iodising Solutions, and so forth, the student is therefore asked to look them up.

Photoramic Effects.—The term given by Mr. J. Hay Taylor in the Optical Magic Lantern Journal of November, 1889, to the animated picture photography by Mr. Friese Green, of London.—*See* Kinetoscope.

Phosphorus.—A combustible non-metallic elementary substance of a yellowish colour, luminous in the dark and very poisonous. Combined with hydrogen and oxygen forms several acids, the most important being phosphoric acid.

Piracy of Slides.—Unfortunately slides are sometimes copied by the unscrupulous and offered for sale, or hire. And as a slide is not protected by law any more than hundreds of other things, artists would do well by copyrighting their works and to protect themselves against the pirates.

Platinum.—Is a dullish white metal forming one of the group with which iridium, palladium, etc., are also associated, and with these, or some of these, is invariably alloyed when found. Its specific gravity is 21·05, or twenty-one and a half times heavier than water, tough, but very malleable, and can be rolled into the thinnest of sheets, or drawn into wire finer than the finest of cottons. Owing to its infusibility it can only be melted in an oxy-hydrogen or electric furnace. The chlorides of platinum are used in photography for what are known as the platinotype process. In consequence of its resistance to the action of acids, and its infusiblity, it is largely used in the construction of chemical apparatus, and lead, tin, and caustic alkalies, however, attack it. It is considered as one of the precious metals, its value varying like silver. Approximate cost at present time that of 18 carat gold.

Pneumatic Trough.—Invented and used by Dr. Priestly. It is an apparatus mostly used for the purification of gases, and consists of a trough of water, in the centre of which—under the water—is a bee-hive stand. On this stand is placed the glass cylinder also filled with water—or providing the gas be soluble in water, mercury is used in place of water. The weight of the air keeps the liquid in the vessels, the tube leading from the gas generator is directed from bottom of bee hive stand to cylinder, the gas rises to the top of the collecting vessel and drives down the water or mercury and soon becomes fully charged with the gas entirely free from the admixture with air.

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Polariscope.—An instrument for demonstrating the phenomena of polarised lights.

Polarised Light.—Light differing in some of its properties to ordinary light, behaving in a variety of ways with substances in agreement to the manner in which it falls upon them, and appearing as it were to take sides. *See* O.M.L.J., Vol. VII., pages 51 and 63.

Polyopticon.—Merely another name for the aphengescope.

Pops.—What are called pops by lanternists are but small or miniature explosions.

Portable Screen Stands.—Those made to fold up into the smallest space as a convenience in travelling.

Potassium.—The metallic base of potash.

Press Rules.—As many readers may be induced from time to time to put their ideas and experiences in the form of an article for, say, the O.M.L.J., a hint or two may not be out of place. On the front outside page write your name, address, title of article, and number of words it contains, as follows, only one under the other. "The Lantern in Danger"—500 words—Robert Brown—Rose Cottage—Barnet. A penny manuscript book is about the handiest form to use, and only to be written on one side of the paper; this must be religiously observed, otherwise the poor compositor would often be in a sorry plight, for be it remembered an article is sometimes distributed among many men, and should a sheet be cut into two or three pieces, the greatest confusion would prevail. Let your diction be as concise as possible. The MS. should be forwarded flat if possible, if that is not convenient, one fold down the back is next best, but never under any pretence is it to be rolled. If typewritten so much the better, if not, the caligraphy must be plain and distinct. All the sheets must be fastened together at the top left hand corner with a paper fastener, or sewn.

Pressure Boards.—When rubber bags are used for gases it is necessary to place weights of some kind upon them to increase the pressure, and this is best done by using pressure boards which are made for the purpose; they are hinged together to form a wedge-shaped box, battered outside with ledge-on cross-bar for weights to rest upon and keep them in place. The pressure board adds greatly to the durability of the bag. They are easily made, care being given to the sides of the board that comes in contact with the bag; these should be perfectly smooth. To keep the bags in their place whilst between the boards, leather straps will serve best.

Pressure Gauge.—All lanternists should have in their kit a cylinder gauge. Nothing is more annoying than not to know the quantity of gas at disposal. These gauges are made in various sizes corresponding to the sizes of cylinders, and properly made show at a glance the number of cubic feet of gas the cylinder contains. A word of caution, don't use the same gauge for the two gases, but keep one for each.

Projection.—Magnified objects, pictures, phenomena and so forth, when thrown upon the screen by means of natural or artificial light, in conjunction with lenses for the purpose, is known as projection.

Pyrotylin.—Gun-cotton and other substances of explosive kind. Vegetable fibre is soaked in a solution of nitric and sulphuric acid, and after several washings allowed to dry. The process is simple, and if attention be given to detail, it may afterwards be stored for an indefinite period.—*See* Collodion.

(*To be continued.*)

Photographic Perspective with Lenses of Different Types.

By T. PERKINS.

IT is frequently asserted that certain lenses—those of the wide-angled family—produce pictures with exaggerated or distorted perspective. Let us examine the question thoroughly, and see how far there is ground for this charge. Any lens, whatever its character, will falsify perspective if the camera is tilted so that the plate or focusing screen is out of the vertical, or if, the lens being horizontal, the side swing is used. We will therefore assume that lens and camera are so arranged that the axis of the lens is horizontal, and the focusing screen perpendicular to the axis, and therefore absolutely vertical. We will, moreover, assume that the lens is rectilinear, for

every photographer

knows that a single lens gives rise to curvilinear distortion of all straight lines, except those which pass through the axis of the lens, the distortion being more and more pronounced the further the lines are removed from the axis. These assumptions being made, we maintain that there is absolutely no distortion or exaggeration of perspective, whatever be the character of the lens—rapid rectilinear, wide-angled rectilinear, or modern anastigmat.

Let us plant the camera, which we take to be a whole plate one (8½ by 6½), ready to photograph some architectural object, for it is in such photographs that exaggerated perspective, if it exists, will be most easily seen; and let us procure one lens of each of the above types, all of the same focus, say 5 inches, and proceed to photograph the building (with the three lenses successively), using any stop we find needful to secure the definition we desire, for the stop has no influence on the perspective, and taking care not to move the camera when changing the lens. We will then procure a lens of any of the above types of 10 inch focus, and leaving the camera unmoved, saving that we must rack out the lens or back to focus the view, expose a fourth plate.

We will now develop the four plates. The one exposed by means of the R.R. of 5 inch focus will probably have corners which have not been affected by light because the circle of illumination is not sufficient to cover the plate; the other three plates will be fully covered.

We will now cut a mask, 8½ by 6½ inches, with a central aperture of 4¼ by 3¼, and then proceed to make prints from the four negatives unmarked, and then print once more from the first three, using the mask already described. We will then trim down the print with the dark corners until we get rid of these, and shall probably have left a print about 5 by 4.

We will now give this print, the two unmasked ones from the two negatives taken with the W.A.R. and the anastigmat and the print from the negative taken with the 10 inch lens to some critic, and ask for his opinion. He probably will be quite satisfied with the first and last, but condemn the second and third on account of their

false perspective.

"Taken," he will say, "with a wide-angled lens, foreground objects exaggerated in size, distant objects dwarfed, as is always the case when such lenses are used." We will then show him the three prints made from the negatives, the mask being used, and he will probably say they are quite satisfactory. Thus it will be seen that any so-called exaggerated perspective is due not to the character of the lens employed, but to the way in which it is used.

Let us examine the three masked prints and the large one taken with the 10 inch lens, and we shall find that the first three are identically the same, as if they had all been printed from the same negative, and that they include exactly the same amount of subject as the large print includes, each object in this last one being exactly twice the height and twice the breadth that it is in any one of the other three. Thus, if the length of the plate bears the same ratio to the focal length of the lens, the pictures will be similar, and by reduction or enlargement may be made to yield prints exactly alike in size and subject included, and the slope of all the lines.

Why is it then that the prints taken from the whole of the second and third negatives give an impression of exaggerated perspective? Simply because too wide an angle is included, bringing in objects too near the camera; these are represented in their true proportions by the lens, but offend the eye because, on account of their exceeding nearness, they occupy too much space. The tombstone close at hand—which would not have been shown at all if the plate included only a moderate angle, and which we cut off by the mask when printing with it on the negative—looks larger than the church itself, and spoils the effect. Thus we find that the wide-angled lens, while it gives a true representation and absolutely correct perspective such as a drawing made by a draughtsman according to the rules of perspective would show, the point of station being the same, yet produces an unpleasant result.

The reason that wide-angled lenses have got their bad reputation is because they are used improperly. Two men go out armed with cameras of the same size, one with a short focused wide-angled lens, the other with a long focused narrow-angled one; each photographs the same object so as to get it approximately the same size, and to do this the former has to plant his camera much nearer than the latter, with the result that the lines converge much more strongly to the vanishing point, and while the nearer objects may have the same absolute size on the two negatives, the distant ones are much smaller on that made with the short focused lens. Had they both occupied the same spot when making their exposures, and had the man with the short focused lens been content to use a proportionately smaller plate so as to include the same angle, both views, though differing in absolute size, would have been equally pleasing.

But, it may be asked, why should we use a costly 7 inch W.A.R. or anastigmatic lens, for instance, which is capable of covering a 12 by 10 plate, when only using a 6 by 5 plate in preference to the far cheaper R.R. of the same focus? The reason is that the W.A.R. or anastigmatic doublet, because its

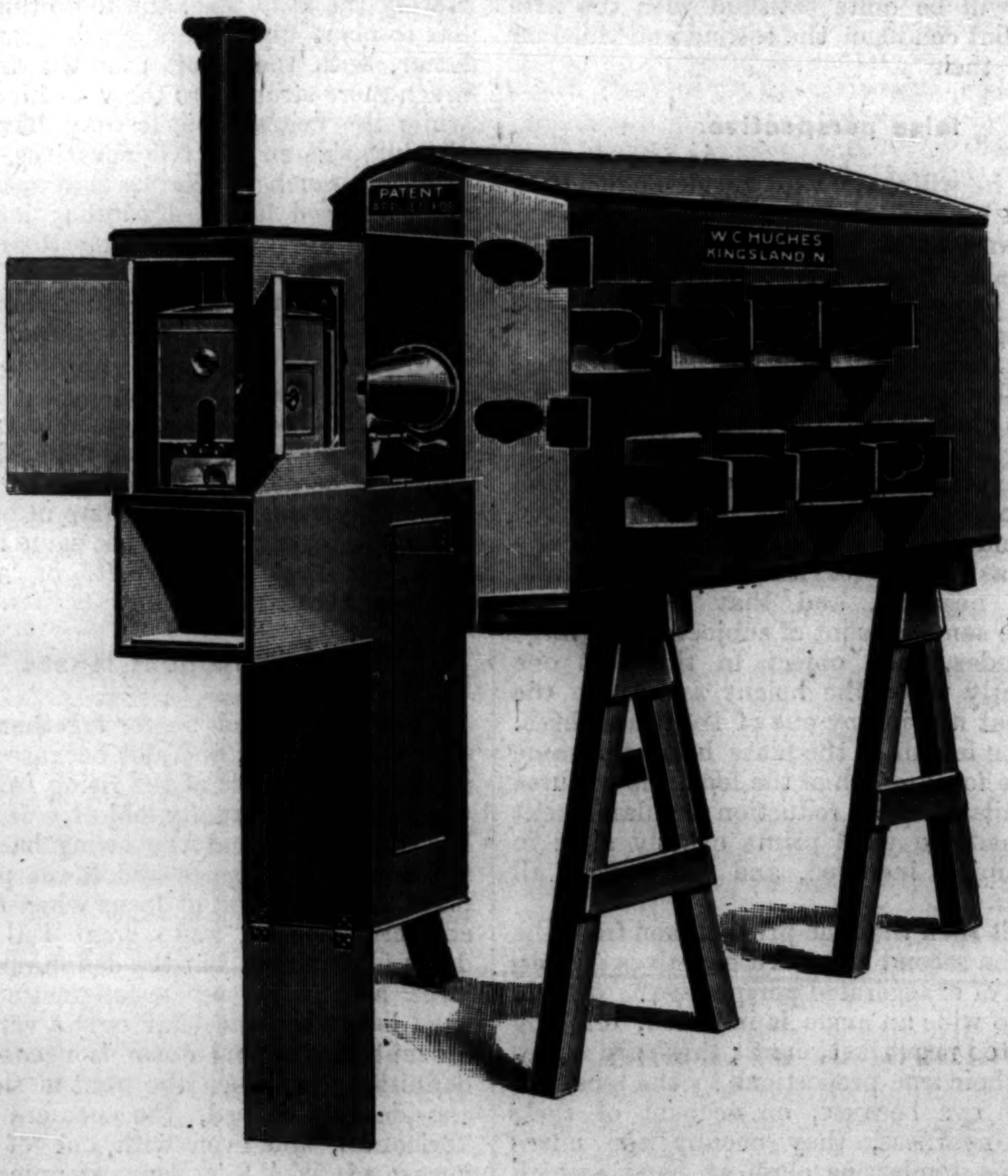
component lenses

are brought so much nearer together, gives more even illumination, and also because it admits of a much greater use of the rising front when we wish to include a lofty object. If the camera has to be tilted, and the swing back used, it is found that the upper and lower parts of the plate are much out of focus when the centre is correctly focused, and a great deal of stopping down is required; but the definition over a very large area when an anastigmatic doublet is used is so exquisite that only a very moderate amount of stopping down is needed to secure definition even when the front of the camera is considerably raised, the camera remaining horizontal, and even with one of the older forms of W.A.R.'s less stopping down is needed than when the camera is tilted and the back swung into the vertical plane. Hence, it is our invariable custom to use a lens of one or other of these two last types when engaged in architectural photography.

NEW APPARATUS.

PHOTO-ROTOSCOPE.

This is an adaptation brought out by Mr. W. C. Hughes for showing animated photographs at fairs, bazaars, or public streets, at so much a head. It consists of the lantern and cinematograph some time ago brought out by Mr. Hughes, together with a kennel-like extension, which, as shown in the illustration, is supported upon tressles. The lantern, which is fitted with the Pamphengos oil lamp, projects the photographs on a proscenium at the far end; the openings at the sides being so arranged that a clear view is seen from each, so that 10 adults and 10 children can view the pictures at one time. The length of the outfit is 9 feet, and the screen at the far end 3 feet square. The apparatus is put together with bolts, so that it can, for packing purposes, be taken apart readily. The lantern portion can, of course, be instantly removed should it be required for any ordinary lantern exhibition in a room or hall. The film as it passes in front of the condenser falls into the long box-like receptacle, from which it can easily be removed for rewinding.



NO. 2 "SPECIAL" BULL'S-EYE KODAK.

The Eastman Photographic Materials Company, Limited, have introduced certain improvements into one of their Bull's-eye series of kodaks, which has been brought out under the name of No. 2 "Special" Bull's-eye Kodak. This camera, which should prove of particular interest to those intending to make lantern slides by contact printing, takes negatives 3½ inches by 3½ inches, and it holds sufficient film for 18 exposures, and can by means of film cartridges be reloaded in daylight. The lens is a rapid rectilinear with Iris diaphragm, and the shutter is provided with simple adjustments, whereby it can at will be used either for snap-shots or time exposures; also with a regulator with three adjustments for quick exposures. As will be seen in the illustration, a view-finder is provided. This company are also supplying (at a guinea) an excellent wide angle lens for use with their No. 4 Cartridge Kodak.

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PATENT INTELLIGENCE.

The following List, relating to current Patent Applications, is compiled expressly for the "Optical Magic Lantern Journal" by W. P. Thompson & Co., Patent Agents, of 322, High Holborn, London, W.C., to whom all enquiries for further information should be addressed.

No. RECENT PATENT APPLICATIONS.

8683. 14th April, 1898. John Aykroyd and Barnard Aykroyd. Improvements in or appertaining to acetylene generators.

8702. 14th April, 1898. John Montgomery Tavernor and Edward Lewis Levetus. Improvements in or relating to lamps for generating and burning acetylene gas.

8812. 15th April, 1898. Humphery Jones and Christmas Jones. Portable acetylene gas lamps.

8911. 16th April, 1898. Jules Hippolyie Corthesy and Elias B. Koopman. Improvements in or connected with means for obtaining optical effects or changes of wordings or pictures in advertisements or other presentations in boats, trains, omnibuses, and all means of conveyance.

9674. 27th April, 1898. John Bremridge Melhuish, Malcolm Guthrie, and Joseph Henry Hughes. Improvements in connection with acetylene lamps.

9738. 28th April, 1898. James Adams. Improvements in and relating to cameras and projecting apparatus for kinematograph pictures.

8951. 18th April, 1898. Frederick Ernest Hoffman. Improvements in apparatus for taking and projecting photographs of moving objects.

9374. 23rd April, 1898. James Grieve Lorrain. Improvements in or connected with optical projection apparatus. (The Northern Advertising Company, Nordisk Reklame Kompagni Aktieselskab, Denmark.) Complete.

10047. 2nd May, 1898. Ernest Francis Moy and Gilbert Howard Harrison. Improvements in and relating to apparatus used in displaying pictures upon transparent films.

10685. 10th May, 1898. The Mutoscope and Biograph Syndicate, Limited, and Joseph Mason. Improvements in methods of, and apparatus for exhibiting a series of pictures giving the appearance of motion.

10985. 13th May, 1898. John Bilbie and Henri Drivet. Improvements in acetylene generators or lamps. Complete.

SPECIFICATIONS PUBLISHED

Copies of the following specifications may be obtained by remitting 1/- for each specification to W. P. Thompson & Co., Patent Agents, 322, High Holborn, London, W.C.

10603 of 1897. Acres. Apparatus for taking, viewing, and projecting photographs of moving objects.

29571 of 1897. De Thiersant and Coulson. Acetylene gas producer.

10686 of 1897. Patterson. Acetylene gas.

12785 of 1897. Day (Latham). Apparatus for photographing objects in motion and projecting upon a screen.

14835 of 1897. Gaskell and Reeve. Acetylene gas apparatus for photographing at night.

18701 of 1897. Davenport electric arc lamp for projection purposes.

5594 of 1898. Schulter and Ludemann. Acetylene gas.

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Correspondence.

MOUNTING CONDENSERS, ETC.

To Mr. J. Hay Taylor, Editor.

SIR,—"A Reader" doubtless knows that whatever medium light has to pass through there is a loss of luminosity, and the first effect of imposing a piece of stout or plate glass between the light and condenser would be that from 12 to 15 per cent. of light would be absorbed, or cut off, so that where intensified light is the thing aimed for, any interposition of glass, etc., to guard the condensers would be objectionable. Second, he will find that the glass protector would break more easily than the condensers, as it would be much nearer the heat; of course the flame from the jet should be so looked after that it is not allowed to pit the lime to such an extent as to make it branch towards the condenser. I have known cases where this has been so neglected that not only has the condenser cracked but the whole front of a bi-unial burnt out. As an operator I am perfectly aware that with many lecturers not much time is allowed for proper attention to the lime and flame, all the attention being directed to slide effects, etc., and I think that where this is the case it is preferable to guard the condensers, especially when powerful mixed jets or electric light is used, but do not use glass, as it is apt to break and fall towards the lime, and break that such would make matters worse than if the condenser cracked. The smash of glass would be heard, the light go out, and perhaps half of the scared audience would go out too, in search for the daily paper reporter. What I would suggest, is that a piece of clear mica be obtained by ordering a mica chimney for an incandescent burner. These can be got made in one piece, are very clear, and when cut open measure about 8 inches by 4 inches; this will stand any amount of heat, and if one felt so disposed he could make a kind of chimney to fit over the lime and jet nipple, and so direct the heat to the top of the lantern.

Yours truly,
"CRACKS."

East Greenwich,
May, 1898.

:o:

Notes and Queries.

A. M. C.—We cannot publish your statement, as in several matters we know it to be incorrect.

Registration.—Having as you say got the lantern stages to coincide, the next thing is to plane off or add to the frames of the slides, so that they will register correctly. Your letter is rather too indefinite for us to grasp your exact meaning, but if you will put your questions in definite language we will endeavour to assist you. You appear to know a good deal about registration by your remarks, so we do not exactly know on which point you wish information.

Arthur Johnston.—With very little trouble you can make a trimmer for the wicks of your 4-wick lamp. Proceed as follows:—Take a strip of tin, say an inch deep and about twice as long as the wick is wide, fold it in two lengthwise, placing a piece of metal or wood at the bend so as to keep the two leaves apart, slightly round the upper side by means of a file. All that is necessary is to place this round the wick when it is well turned up, pinch together with the fingers, and run a pair of sharp scissors along the top of the wick; thus allowing the tin shape to act as a sort of template. A little practice will make perfect.

First Attempt.—To say the lantern slide was in any way good or even approaching it would not be correct, for it is as bad as any we have seen. Try a very much shorter exposure, and then note the difference.

Saturator.—Mr. A. W. Scott, of Cardiff, died a few years ago. His ether saturator is not now made, but several good ether saturators are upon the market. Consult our advertising pages.

X. Y. Z. writes:—I am making a new screen stand, and want to splice a loop on the end of some ropes. How is it done? *Ans.*—We regret that we cannot at the moment say more than that the strands of the rope are separated and threaded in and out through the rope. If you can get some nautical friend to show you, one lesson would be worth a lot of reading.

Jas. G. Styles.—For a 7 feet disc at a distance of 14 feet from the screen you will require a lens of 6 inch focus, but for the same size of disc at a distance of 35 feet you must use a lens with a focus of 15 inches. The method by which this is calculated is to multiply the distance between where you decide to place the lantern and the screen by 3, which represents the diameter of slide, and divide this by the diameter of the disc you wish—thus 14 by 3 equals 42. This divided by 7 gives 6 in focus of lens required. In the second instance, 35 is multiplied by 3 and divided by 7, which gives 15 as the focus required.

Showman.—The series of articles on "Modern Optical Illusions" by Mr. Edmund H. Wilkie, of the late Royal Polytechnic Institution, was commenced in this journal for September, 1894. The journals containing the whole series, with illustrations, may be obtained from our publishers.

T. H.—Thanks for the newspaper cutting. We are following the case, and are sorry to see the man in this plight, and do not intend, at least at present, making any note in our columns. It is questionable as to whether he is in his right mind.

B. Turney.—Kerosene lamps, specially constructed as to the admission of air to wick holder, will give a flame similar to that from a Bunsen's gas burner, and if a mantle be used with this, it should give as much light as the gas burner with mantle. We cannot learn that such lamps have yet been placed on the market, although there has been talk of it for some months. A lamp can be obtained with a mantle burning methylated spirits. Those we have seen do not give much light, and are expensive to use.

A. R.—Had the letter referred to been in English instead of French it would have received immediate attention.

TO OUR READERS.

Dear Sirs,—I have commenced the Magic Lantern Almanac and Annual for 1898-9, which is to be published about the beginning of October next. Each year's issue is highly appreciated in every part of the world, principally by reason of the practical articles which appeared therein from the pens of my esteemed friends.

Should you wish to assist lantern users in general with a short practical article of such subjects as are embraced in connection with the lantern, photographic enlarging or kindred subjects, I would like to receive your manuscript at as early a date as possible.

Many articles, the better to explain details, require an illustration, and in this case a few rough lines or a photograph will suffice from which I can prepare a finished sketch.

I feel assured that many readers of this journal will have some suggestion or other to offer, either by way of an original idea or improvement of some appliance already in existence, or at least some experience in connection with lanterndom.

Yours fraternally,
J. HAY TAYLOR, Editor.